INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live.

Joseph E. Kernan
Governor

Lori F. Kaplan
Commissioner

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.in.gov/idem

March 19, 2004

TO: Interested Parties / Applicant

RE: Ball Brass and Aluminum Foundry / 033-17792-00037

FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

Notice of Decision: Approval - Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 13-15-5-3, this permit is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3 and IC 13-15-6-1 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

(1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
(2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
(3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

(1) the name and address of the person making the request;
(2) the interest of the person making the request;
(3) identification of any persons represented by the person making the request;
(4) the reasons, with particularity, for the request;
(5) the issues, with particularity, proposed for considerations at any hearing; and
(6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures
FNPER.dot 9/16/03

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NEW SOURCE CONSTRUCTION PERMIT and MINOR SOURCE OPERATING PERMIT OFFICE OF AIR QUALITY

Ball Brass and Aluminum Foundry
520 Hazel Street
Auburn, Indiana 46706

(herein known as the Permittee) is hereby authorized to *construct and* operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this permit.

This permit is issued to the above mentioned company under the provisions of 326 IAC 2-1.1, 326 IAC 2-6.1 and 40 CFR 52.780, with conditions listed on the attached pages.

Operation Permit No.: MSOP 033-17792-00037	
Issued by: Original Signed by Paul Dubenetzky Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: March 19, 2004 Expiration Date: March 19, 2009

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SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 and A.2 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-5.1-3(c)] [326 IAC 2-6.1-4(a)]

The Permittee owns and operates a stationary brass and aluminum foundry.

Authorized Individual:	President
Source Address:	520 Hazel Street, Auburn, Indiana 46706
Mailing Address:	P.O. Box 110, Auburn, Indiana 46706
General Source Phone:	(260) 925-3517
SIC Code:	3365
County Location:	DeKalb
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Minor Source Operating Permit Minor Source, under PSD Rules; Minor Source, Section 112 of the Clean Air Act Not in 1 of 28 Source Categories

A.2 Emissions Units and Pollution Control Equipment Summary

This stationary source is approved to construct and operate the following emissions units and pollution control devices:

(a) Three (3) electric induction brass melting furnaces (identified as Unit 1, 2 and 3), each with a maximum throughput rate of 167 pounds of brass ingots per hour, using a wheelabrator dust collector (identified as DC-3) as control and exhausting at stacks EIF-1, 2 and 3. These units were constructed in 1976.

(b) Five (5) gas fired aluminum melting furnaces, with a combined heat input capacity of 15 MMBtu per hour and each with a maximum throughput rate of 75 pounds of aluminum ingots and flux per hour. These units were constructed in 1974.

(c) Brass foundry facility consisting of brass castings, pouring/cooling, sand handling, and shakeout, each with a maximum throughput rate of 500 pounds per hour. The shakeout unit is controlled by one (1) wheelabrator dust collector (identified as DC-2), which exhausts at stack DC-2. These units were constructed in 1976. The brass sand handling system consists of one (1) silo, mullers, bucket elevators, conveyors, six (6) molders, and one (1) shakeout conveyor.

(d) Aluminum foundry facility consisting of aluminum castings, pouring/cooling, fluxing, sand handling, and manual shakeout. Aluminum castings, pouring/cooling, sand handling, and manual shakeout, each have a maximum throughput capacity of 375 pounds per hour; and aluminum fluxing has a maximum throughput capacity of 0.20 pounds per hour. These units were constructed in 1974. The aluminum sand handling system consists of one (1) silo, mullers, bucket elevators, conveyors, one (1) molder, and one (1) shakeout conveyor.

(e) One(1) tumble cleaning unit, with a maximum capacity of 600 pounds of castings per hour, using a wheelabrator dust collector (identified as DC-1) as control and exhausting at stack DC-1. This unit was installed in 1983.

(f) Two (2) aluminum abrasive grinders, each with a maximum throughput rate of 188 pounds of castings per hour, controlled by one (1) Torit dust collector, and exhausting at stack EV-13. This unit was installed in 1976**.**

(g) Four (4) brass abrasive grinders, each with a maximum throughput rate of 125 pounds of castings per hour, controlled by one (1) Torit dust collector, and exhausting at stack EV-4. This unit was installed in 1976.

(h) One (1) reclaimer (metal reclaimer from waste sand), with a maximum throughput rate of 1000 pounds per hour, using a baghouse (identified as DC-4) as control. This unit was installed in 1983.

(i) Two (2) brass cut off saws, with a combined throughput capacity of 375 pounds per hour and controlled by two (2) cyclones (identified as C-1 and C-2). These units were installed in 1976.

(j) Eleven (11) natural gas fired space heaters, with a combined heat input capacity of 2.25 MMBtu per hour. These units were installed in 1994.

(k) Two (2) natural gas fired core bake ovens, with a combined heat input capacity of 1.0 MMBtu per hour.

(l) One (1) natural gas fired heat treat bath, with a maximum heat input capacity of 1.5 MMBtu per hour.

(m) Two (2) tumble cleaning units, each with a maximum capacity of 300 pounds of castings per hour, using a wheelabrator dust collector (identified as DC-1) as control and exhausting at stack DC-1. These units will be installed in 2003.

(n) One (1) electric induction brass melting furnace (identified as Unit 4), with a maximum throughput capacity of 167 pounds of brass ingots and flux per hour, using a wheelabrator dust collector (identified as DC-3) as control and exhausting at stacks EIF-4. Furnaces 4 will be constructed in 2003.

(o) One (1) parts washing tank using Safety Kleen, with a maximum capacity of 125 gallons.

SECTION B GENERAL CONDITIONS

B.1 Permit No Defense [IC 13]

This permit to construct and operate does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

B.2 Definitions

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations IC 13-11, 326 IAC 1-2, and 326 IAC 2-1.1-1 shall prevail.

B.3 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.

B.4 Revocation of Permits [326 IAC 2-1.1-9(5)]

Pursuant to 326 IAC 2-1.1-9(5)(Revocation of Permits), the Commissioner may revoke this permit if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

B.5 Permit Term and Renewal [326 IAC 2-6.1-7(a)][326 IAC 2-1.1-9.5]

This permit is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions of this permit do not affect the expiration date.

The Permittee shall apply for an operation permit renewal at least ninety (90) days prior to the expiration date. If a timely and sufficient permit application for a renewal has been made, this permit shall not expire and all terms and conditions shall continue in effect until the renewal permit has been issued or denied.

B.6 Modification to Permit [326 IAC 2]

Notwithstanding the Section B condition entitled “Minor Source Operating Permit”, all requirements and conditions of this construction permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2 (Permit Review Rules).

B.7 Minor Source Operating Permit [326 IAC 2-6.1]

This document shall also become a minor source operating permit pursuant to 326 IAC 2-6.1 when, prior to start of operation, the following requirements are met:

(a) The attached Affidavit of Construction shall be submitted to the Office of Air Quality (OAQ), Permit Administration & Development Section.

(1) If the Affidavit of Construction verifies that the facilities covered in this Construction Permit were constructed as proposed in the application, then the facilities may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM.

(2) If actual construction of the emission units differs from the construction proposed in the application, the source may not begin operation until the permit has been revised pursuant to 326 IAC 2-6.1-6 and 326 IAC 2-2 and an Operation Permit Validation Letter is issued.

(b) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.

(c) Upon receipt of the Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section, the Permittee shall attach it to this document.

(d) The operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-1.1-7(Fees).

B.8 Phase Construction Time Frame

Pursuant to 326 IAC 2-2-8(Revocation of Permits), the IDEM may revoke this permit to construct if the:

(a) Construction of one (1) electric induction furnace, two (2) tumble cleaning units, and one (1) parts washing tank has not begun within eighteen (18) months from the effective date of this permit or if during the construction of the above mentioned emission units, work is suspended for a continuous period of eighteen (18) months or more.

The OAQ may extend such time upon satisfactory showing that an extension, formally requested by the Permittee is justified.

B.9 Annual Notification [326 IAC 2-6.1-5(a)(5)]

(a) Annual notification shall be submitted to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this permit.

(b) Noncompliance with any condition must be specifically identified. If there are any permit conditions or requirements for which the source is not in compliance at any time during the year, the Permittee must provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be, achieved. The notification must be signed by an authorized individual.

(c) The annual notice shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in the format attached no later than March 1 of each year to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, IN 46206-6015

(d) The notification shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

B.10 Preventive Maintenance Plan [326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) within ninety (90) days after issuance of this permit, including the following information on each emissions unit:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If, due to circumstances beyond the Permittee's control, the PMPs cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

The PMP extension notification does not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(b) The Permittee shall implement the PMPs, including any required record keeping, as necessary to ensure that failure to implement a PMP does not cause or contribute to an exceedance of any limitation on emissions or potential to emit.

(c) A copy of the PMP's shall be submitted to IDEM, OAQ, upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ, may require the Permittee to revise its PMP whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or potential to emit. The PMP does not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(d) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation, Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.11 Permit Revision [326 IAC 2-5.1-3(e)(3)] [326 IAC 2-6.1-6]

(a) Permit revisions are governed by the requirements of 326 IAC 2-6.1-6.

(b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

Any such application shall be certified by an "authorized individual" as defined by 326 IAC 2-1.1-1.

(c) The Permittee shall notify the OAQ within thirty (30) calendar days of implementing a notice-only change. [326 IAC 2-6.1-6(d)]

(d) No permit amendment or modification is required for the addition, operation or removal of a nonroad engine, as defined in 40 CFR 89.2.

B.12 Inspection and Entry [326 IAC 2-5.1-3(e)(4)(B)] [326 IAC 2-6.1-5(a)(4)][IC 13-14-2-2] [IC13-30-3-1]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

(a) Enter upon the Permittee's premises where a permitted source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

(b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy, at reasonable times, any records that must be kept under this title or the conditions of this permit or any operating permit revisions;

(c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect, at reasonable times, any processes, emissions units (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit or any operating permit revisions;

(d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and

(e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.13 Transfer of Ownership or Operation [326 IAC 2-6.1-6(d)(3)]

Pursuant to [326 IAC 2-6.1-6(d)(3)] :

(a) In the event that ownership of this source is changed, the Permittee shall notify IDEM, OAQ, Permits Branch, within thirty (30) days of the change.

(b) The written notification shall be sufficient to transfer the permit to the new owner by an notice-only change pursuant to 326 IAC 2-6.1-6(d)(3).

(c) IDEM, OAQ, shall issue a revised permit.

The notification which shall be submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

B.14 Annual Fee Payment [326 IAC 2-1.1-7]

(a) The Permittee shall pay annual fees to IDEM, OAQ within thirty (30) calendar days of receipt of a billing.

(b) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, I/M & Billing Section), to determine the appropriate permit fee.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

C.1 Particulate Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) pounds per hour [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2(e)(2), particulate emissions from any process not exempt under 326 IAC 6-3-1(b) or (c) which has a maximum process weight rate less than 100 pounds per hour and the methods in 326 IAC 6-3-2(b) through (d) do not apply shall not exceed 0.551 pounds per hour.

C.2 Permit Revocation [326 IAC 2-1.1-9]

Pursuant to 326 IAC 2-1.1-9 (Revocation of Permits), this permit to construct and operate may be revoked for any of the following causes:

(a) Violation of any conditions of this permit.

(b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.

(c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.

(d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.

(e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of this article.

C.3 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.4 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions).

C.5 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted by using good engineering practices (GEP) pursuant to 326 IAC 1-7-3.

C.6 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

(a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.

(b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:

(1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or

(2) If there is a change in the following:

(A) Asbestos removal or demolition start date;

(B) Removal or demolition contractor; or

(C) Waste disposal site.

(c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).

(d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management
Asbestos Section, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification by an “authorized individual” as defined by 326 IAC 2-7-1(34).

(e) Procedures for Asbestos Emission Control
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.

(f) Demolition and Renovation
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).

(g) Indiana Accredited Asbestos Inspector
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Accredited Asbestos inspector is not federally enforceable.

Testing Requirements

C.7 Performance Testing [326 IAC 3-6]

(a) Compliance testing on new emissions units shall be conducted within 60 days after achieving maximum production rate, but no later than180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date.

(b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14 days) prior to the actual date.

(c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ, not later than forty-five (45) days after the completion of the testing. An extension may be granted by the IDEM, OAQ, if the source submits to IDEM, OAQ, a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.8 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U.S. EPA.

Compliance Monitoring Requirements

C.9 Monitoring Methods [326 IAC 3][40 CFR 60][40 CFR 63]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, 40 CFR 60, Appendix B, 40 CFR 63, or other approved methods as specified in this permit.

Record Keeping and Reporting Requirements

C.10 Malfunctions Report [326 IAC 1-6-2]

Pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

(a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) or appointed representative upon request.

(b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAQ, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.

(c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).

(d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

C.11 General Record Keeping Requirements [326 IAC 2-6.1-5]

(a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented when operation begins.

C.12 General Reporting Requirements [326 IAC 2-1.1-11] [326 IAC 2-6.1-2] [IC 13-14-1-13]

(a) Reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

(b) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

(c) Unless otherwise specified in this permit, any reports required in Section D of this permit

shall be submitted within thirty (30) days of the end of the reporting period. The reports do not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(d) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period. Reporting periods are based on calendar years.

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description:

(a) Three (3) electric induction brass melting furnaces (identified as Unit 1, 2 and 3), each with a maximum throughput rate of 167 pounds of brass ingots per hour, using a wheelabrator dust collector (identified as DC-3) as control and exhausting at stacks EIF-1, 2 and 3. These units were constructed in 1976.

(b) Five (5) gas fired aluminum melting furnaces, with a combined heat input capacity of 15 MMBtu per hour and each with a maximum throughput rate of 75 pounds of aluminum ingots and flux per hour. These units were constructed in 1974.

(c) Brass foundry facility consisting of brass castings, pouring/cooling, sand handling, and shakeout, each with a maximum throughput rate of 500 pounds per hour. The shakeout unit is controlled by one (1) wheelabrator dust collector (identified as DC-2), which exhausts at stack DC-2. These units were constructed in 1976. The brass sand handling system consists of one (1) silo, mullers, bucket elevators, conveyors, six (6) molders, and one (1) shakeout conveyor.

(d) Aluminum foundry facility consisting of aluminum castings, pouring/cooling, fluxing, sand handling, and manual shakeout. Aluminum castings, pouring/cooling, sand handling, and manual shakeout, each have a maximum throughput capacity of 375 pounds per hour; and aluminum fluxing has a maximum throughput capacity of 0.20 pounds per hour. These units were constructed in 1974. The aluminum sand handling system consists of one (1) silo, mullers, bucket elevators, conveyors, one (1) molder, and one (1) shakeout conveyor.

(n) One (1) electric induction brass melting furnace (identified as Unit 4), with a maximum throughput capacity of 500 pounds of brass ingots and flux per hour, using a wheelabrator dust collector (identified as DC-3) as control and exhausting at stacks EIF-4. Furnaces 4 will be constructed in 2003.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards

D.1.1 Particulate [326 IAC 6-3-2]

(a) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the particulate emissions from the brass and aluminum foundry shall not exceed the particulate emission limits in pounds per hour as shown in the table below.

Emission Units	Process Weight (lbs/hour)	Process Weight (tons/hour)	Particulate Emission Limit (lbs/hour)
Each of the 3 Brass Furnaces	167	0.08	0.78
1 Brass Furnace	500	0.25	1.62
Brass Castings	500	0.25	1.62
Brass Pouring/Castings	500	0.25	1.62
Brass Sand Handling	500	0.25	1.62
Brass Shakeout	500	0.25	1.62
Aluminum Castings	375	0.188	1.34
Aluminum Pouring/Cooling	375	0.188	1.34

Aluminum Sand Handling	375	0.188	1.34
Aluminum Manual Shakeout	375	0.188	1.34

The pounds per hour limitation was calculated using the following equation:

Interpolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

(b) Pursuant to 326 IAC 6-3-2(e)(2), the particulate emissions from any process not exempt under 326 IAC 6-3-1(b) or (c) and which has a maximum process weight rate less than 100 pounds per hour and the methods in 326 IAC 6-3-2(b) through (d) do no apply shall not exceed 0.551 pounds per hour. Therefore, the five (5) aluminum furnaces shall each not exceed 0.551 pounds per hour.

Compliance Determination Requirements

D.1.2 Particulate Control

In order to comply with D.1.1, the wheelabrator dust collector (identified as DC-3) for particulate control shall be in operation and control emissions from the four (4) brass electric induction furnaces at all times that the four (4) brass electric induction furnaces are in operation.

SECTION D.2 FACILITY OPERATION CONDITIONS

Facility Description:

(e) One(1) tumble cleaning unit, with a maximum capacity of 600 pounds of castings per hour, using a wheelabrator dust collector (identified as DC-1) as control and exhausting at stack DC-1. This unit was installed in 1983.

(f) Two (2) aluminum abrasive grinders, each with a maximum throughput rate of 188 pounds of castings per hour, controlled by one (1) Torit dust collector, and exhausting at stack EV-13. This unit was installed in 1976**.**

(g) Four (4) brass abrasive grinders, each with a maximum throughput rate of 125 pounds of castings per hour, controlled by one (1) Torit dust collector, and exhausting at stack EV-4. This unit was installed in 1976.

(h) One (1) reclaimer (metal reclaimer from waste sand), with a maximum throughput rate of 1000 pounds per hour, using a baghouse (identified as DC-4) as control. This unit was installed in 1983.

(i) Two (2) brass cut off saws, with a combined throughput capacity of 375 pounds per hour and controlled by two (2) cyclones (identified as C-1 and C-2). These units were installed in 1976.

(m) Two (2) tumble cleaning units, each with a maximum capacity of 300 pounds of castings per hour, using a wheelabrator dust collector (identified as DC-1) as control and exhausting at stack DC-1. These units will be installed in 2003.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards

D.2.1 Particulate [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the particulate emissions from six (6) abrasive grinders, three (3) tumble cleaning units, one (1) metal reclaimer, and two (2) brass cutoff saws shall not exceed the particulate emission limits in pounds per hour as shown in the table below.

Emission Units	Process Weight (lbs/hour)	Process Weight (tons/hour)	Particulate Emission Limit (lbs/hour)
Each of the 2 Aluminum Abrasive Grinders	187.5	0.094	0.84
Each of the 4 Brass Abrasive Grinders	125	0.063	0.64
1 Tumble Cleaning Unit	600	0.30	1.83
Each of the 2 Brass Cut-off Saws	187.5	0.094	0.84
1 Metal Reclaimer	1000	0.50	2.58
Each of the 2 Tumble Cleaning Units	300	0.15	1.15

The pounds per hour limitation was calculated using the following equation:

Interpolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

Compliance Determination Requirements

D.2.2 Particulate Control

In order to comply with D.2.1 the one (1) baghouse for particulate control shall be in operation and control emissions from the one (1) metal reclaimer at all times that the one (1) metal reclaimer is in operation.

SECTION D.3 FACILITY OPERATION CONDITIONS

Facility Description:

(o) One (1) parts washing tank using Safety Kleen, with a maximum capacity of 125 gallons.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards

D.3.1 Volatile Organic Compounds (VOC) [326 8-3-5]

(a) Pursuant to 326 IAC 8-3-5(a) (Cold Cleaner Degreaser Operation and Control), for cold cleaner degreaser operations without remote solvent reservoirs constructed after July 1, 1990, the Permittee shall ensure that the following control equipment requirements are met:

(1) Equip the degreaser with a cover. The cover must be designed so that it can be easily operated with one (1) hand if:

(A) The solvent volatility is greater than two (2) kiloPascals (fifteen (15) millimeters of mercury or three-tenths (0.3) pounds per square inch) measured at thirty-eight degrees Celsius ($38^{O}C$) (one hundred degrees Fahrenheit ($100^{O}F$));

(B) The solvent is agitated; or

(C) The solvent is heated.

(2) Equip the degreaser with a facility for draining cleaned articles. If the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius ($38^{O}C$) (one hundred degrees Fahrenheit ($100^{O}F$)), then the drainage facility must be internal such that articles are enclosed under the cover while draining. The drainage facility may be external for applications where an internal type cannot fit into the cleaning system.

(3) Provide a permanent, conspicuous label which lists the operating requirements outlined in subsection (b).

(4) The solvent spray, if used, must be a solid, fluid stream and shall be applied at a pressure which does not cause excessive splashing.

(5) Equip the degreaser with one (1) of the following control devices if the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius ($38^{O}C$) (one hundred degrees Fahrenheit ($100^{O}F$)), or if the solvent is heated to a temperature greater than forty-eight and nine-tenths degrees Celsius ($48.9^{O}C$) (one hundred twenty degrees Fahrenheit ($120^{O}F$)):

(A) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.

(B) A water cover when solvent is used is insoluble in, and heavier than, water.

(C) Other systems of demonstrated equivalent control such as a refrigerated chiller of carbon adsorption. Such systems shall be submitted to the U.S. EPA as a SIP revision.

(b) Pursuant to 326 IAC 8-3-5(b) (Cold Cleaner Degreaser Operation and Control), the Permittee of a cold cleaning facility construction of which commenced after July 1, 1990, shall ensure that the following operating requirements are met:

(1) Close the cover whenever articles are not being handled in the degreaser.

(2) Drain cleaned articles for at least fifteen (15) seconds or until dripping ceases.

(3) Store waste solvent only in covered containers and prohibit the disposal or transfer of waste solvent in any manner in which greater than twenty percent (20%) of the waste solvent by weight could evaporate.

SECTION D.4 FACILITY OPERATION CONDITIONS

Facility Description:

(j) Eleven (11) natural gas fired space heaters, with a combined heat input capacity of 2.25 MMBtu per hour. These units were installed in 1994.

(k) Two (2) natural gas fired core bake ovens, with a combined heat input capacity of 1.0 MMBtu per hour.

(l) One (1) natural gas fired heat treat bath, with a maximum heat input capacity of 1.5 MMBtu per hour.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards

There are no specifically applicable regulations that apply to these emission units.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE BRANCH

MINOR SOURCE OPERATING PERMIT
ANNUAL NOTIFICATION

This form should be used to comply with the notification requirements under 326 IAC 2-6.1-5(a)(5).

Company Name:	**Ball Brass and Aluminum Foundry**
Address:	**520 Hazel Street**
City:	**Auburn, Indiana 46706**
Phone #:	**(260) 925-3517**
MSOP #:	**033-17792-00037**

I hereby certify that Ball Brass and Aluminum Foundry is
? still in operation.
? no longer in operation.

I hereby certify that Ball Brass and Aluminum Foundry is
? in compliance with the requirements of MSOP 033-17792-00037
? not in compliance with the requirements of MSOP 033-17792-00037

Authorized Individual (typed):
Title:
Signature:
Date:

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

Noncompliance:

MALFUNCTION REPORT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
FAX NUMBER - 317 233-5967

This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE IT HAS POTENTIAL TO EMIT 25 TONS/YEAR PARTICULATE MATTER ?_____, 25 TONS/YEAR SULFUR DIOXIDE ?_____, 25 TONS/YEAR NITROGEN OXIDES?_____, 25 TONS/YEAR VOC ?_____, 25 TONS/YEAR HYDROGEN SULFIDE ?_____, 25 TONS/YEAR TOTAL REDUCED SULFUR ?_____, 25 TONS/YEAR REDUCED SULFUR COMPOUNDS ?_____, 25 TONS/YEAR FLUORIDES ?_____, 100TONS/YEAR CARBON MONOXIDE ?_____, 10 TONS/YEAR ANY SINGLE HAZARDOUS AIR POLLUTANT ?_____, 25 TONS/YEAR ANY COMBINATION HAZARDOUS AIR POLLUTANT ?_____, 1 TON/YEAR LEAD OR LEAD COMPOUNDS MEASURED AS ELEMENTAL LEAD ?_____, OR IS A SOURCE LISTED UNDER 326 IAC 2-5.1-3(2) ?_____. EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION _____.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC _____ OR, PERMIT CONDITION # _____ AND/OR PERMIT LIMIT OF _____

THIS INCIDENT MEETS THE DEFINITION OF 'MALFUNCTION' AS LISTED ON REVERSE SIDE ? Y N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ? Y N

COMPANY:_____PHONE NO. ( )_____
LOCATION: (CITY AND COUNTY)_____
PERMIT NO. _____ AFS PLANT ID: _____ AFS POINT ID: _____ INSP:_____
CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON:_____
_____

DATE/TIME MALFUNCTION STARTED: _____/_____/ 20____ _____ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: _____

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE_____/_____/ 20____ _____ AM/PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO2, VOC, OTHER:_____

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: _____
_____

MEASURES TAKEN TO MINIMIZE EMISSIONS:_____
_____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL* SERVICES:_____
CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS:_____
CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT:_____
INTERIM CONTROL MEASURES: (IF APPLICABLE)_____
_____
_____

MALFUNCTION REPORTED BY:_____TITLE:_____
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY:_____DATE:_____TIME:_____

*SEE PAGE 2

Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

326 IAC 1-6-1 Applicability of rule

Sec. 1. This rule applies to the owner or operator of any facility required to obtain a permit under 326 IAC 2-5.1 or 326 IAC 2-6.1.

326 IAC 1-2-39 "Malfunction" definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner.

***Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

_____

_____

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a
New Source Construction and Minor Source Operating Permit

Source Background and Description

Source Name:	Ball Brass and Aluminum Foundry
Source Location:	520 Hazel Street, Auburn, Indiana 46706
County:	Dekalb
SIC Code:	3365
Operation Permit No.:	033-17792-00037
Permit Reviewer:	ERG/SD

The Office of Air Quality (OAQ) has reviewed an application from Ball Brass and Aluminum Foundry relating to the construction of one (1) brass electric induction furnace, two (2) tumble blast units and the operation of a brass and aluminum foundry.

Ball Brass and Aluminum Foundry consists of an aluminum and brass foundry facilities processing clean aluminum and brass charge along with aluminum and brass scrap generated within the source. The source does not use secondary scrap brought from other sources. Therefore, it is not considered a secondary metal production source and is not in one (1) of the twenty-eight (28) source categories.

Permitted Emission Units and Pollution Control Equipment

There are no permitted facilities operating at this source during this review process.

Unpermitted Emission Units and Pollution Control Equipment

The source consists of the following unpermitted facilities/units:

(a) Three (3) electric induction brass melting furnaces (identified as Unit 1, 2 and 3), each with a maximum throughput rate of 167 pounds of brass ingots per hour, using a wheelabrator dust collector (identified as DC-3) as control and exhausting at stacks EIF-1, 2 and 3. These units were constructed in 1976.

(b) Five (5) gas fired aluminum melting furnaces, with a combined heat input capacity of 15 MMBtu per hour and each with a maximum throughput rate of 75 pounds of aluminum ingots and flux per hour. These units were constructed in 1974.

(c) Brass foundry facility consisting of brass castings, pouring/cooling, sand handling, and shakeout, each with a maximum throughput rate of 500 pounds per hour. The shakeout unit is controlled by one (1) wheelabrator dust collector (identified as DC-2), which exhausts at stack DC-2. These units were constructed in 1976. The brass sand handling system consists of one (1) silo, mullers, bucket elevators, conveyors, six (6) molders, and one (1) shakeout conveyor.

(d) Aluminum foundry facility consisting of aluminum castings, pouring/cooling, fluxing, sand handling, and manual shakeout. Aluminum castings, pouring/cooling, sand handling, and manual shakeout, each have a maximum throughput capacity of 375 pounds per hour; and aluminum fluxing has a maximum throughput capacity of 0.20 pounds per hour. These units were constructed in 1974. The aluminum sand handling system consists of one (1) silo, mullers, bucket elevators, conveyors, one (1) molder, and one (1) shakeout conveyor.

(e) One (1) tumble cleaning unit, with a maximum capacity of 600 pounds of castings per hour, using a wheelabrator dust collector (identified as DC-1) as control and exhausting at stack DC-1. This unit was installed in 1983.

(f) Two (2) aluminum abrasive grinders, each with a maximum throughput rate of 188 pounds of castings per hour, controlled by one (1) Torit dust collector, and exhausting at stack EV-13. This unit was installed in 1976**.**

(g) Four (4) brass abrasive grinders, each with a maximum throughput rate of 125 pounds of castings per hour, controlled by one (1) Torit dust collector and exhausting at stack EV-4. This unit was installed in 1976.

(h) One (1) reclaimer (metal reclaimer from waste sand), with a maximum throughput rate of 1000 pounds per hour, using a baghouse (identified as DC-4) as control. This unit was installed in 1983.

(i) Two (2) brass cut off saws, with a combined throughput capacity of 375 pounds per hour and controlled by two (2) cyclones (identified as C-1 and C-2). These units were installed in 1976.

(j) Eleven (11) natural gas fired space heaters, with a combined heat input capacity of 2.25 MMBtu per hour. These units were installed in 1994.

(k) Two (2) natural gas fired core bake ovens, with a combined heat input capacity of 1.0 MMBtu per hour.

(l) One (1) natural gas fired heat treat bath, with a maximum heat input capacity of 1.5 MMBtu per hour.

New Emission Units and Pollution Control Equipment Receiving Prior Approval

The source plans to construct the following emission units and pollution control devices:

(m) Two (2) tumble cleaning units, each with a maximum capacity of 300 pounds of castings per hour, using a wheelabrator dust collector (identified as DC-1) as control and exhausting at stack DC-1. These units will be installed in 2003.

(n) One (1) electric induction brass melting furnace (identified as Unit 4), with a maximum throughput capacity of 500 pounds of brass ingots and flux per hour, using a wheelabrator dust collector (identified as DC-3) as control and exhausting at stacks EIF-4. This unit will be constructed in 2003.

(o) One (1) parts washing tank using Safety Kleen, with a maximum capacity of 125 gallons.

Existing Approvals

The source has been operating under previous approvals including, but not limited to, the following:

(a) Permit 17-02-83-0082, issued on April 19, 1979.

(b) Registration (a permit number was not assigned by IDEM), issued on May 13, 1983.

(c) Exemption 033-3052-00037, issued on April 21, 1994.

All conditions from previous approvals were incorporated into this permit.

Enforcement Issue

(a) IDEM is aware that equipment has been operated prior to receipt of the proper permit. The subject equipment is listed in this Technical Support Document under the condition entitled Unpermitted Emission Units and Pollution Control Equipment.

(b) IDEM is reviewing this matter and will take appropriate action. This proposed permit is intended to satisfy the requirements of the construction and operation permit rules.

Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

Emission Calculations

The maximum melting capacity of the five (5) aluminum furnaces and four (4) brass electric induction furnaces has an operational limit because of the limitations on the molding capacity. The addition of one (1) new brass melting furnace does not increase the melt capacity of the brass furnaces because it is intended to allow less down time during changes in alloys. The source intends to operate the new brass melting furnace only when the three (3) existing brass melting furnaces are experiencing downtime. The maximum amount of aluminum molded by one (1) molder squeezer station is 3000 pounds per eight (8) hours or 375 pounds per hour. Similarly, the maximum amount of brass molded by six (6) molder squeezer stations is 4000 pounds per eight (8) hours or 500 pounds per hour. In other words, the five (5) aluminum furnaces have operational limits of 375 pounds per hour, while the three (3) existing brass furnaces and one (1) new brass furnace have an operational limit of 500 pounds per hour. Therefore, the potential to emit of all criteria pollutants were calculated taking these operational limitations into account.

See Appendix A of this document for detailed emissions calculations (Appendix A, pages 1 through 13).

Potential To Emit of Source Before Controls

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential To Emit (tons/year)
PM	82.2
PM10	76.6
SO_2	0.09
VOC	1.74
CO	7.36
NO_x	8.78

HAPs	Potential To Emit (tons/year)
Benzene	1.84 E-04
Dichlorobenzene	1.05 E-04
Formaldehyde	6.57 E-043
Hexane	0.1577
Toluene	2.98 E-04

(a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of PM10, VOC, CO, SO_2, and NOx are less than 100 tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.

(b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of PM10 pollutants are greater than 25 tons per year, therefore, the source is subject to the provisions of 326 IAC 2-6.1. A MSOP will be issued.

(c) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is less than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is less than twenty-five (25) tons per year, therefore, the source is not subject to the provisions of 326 IAC 2-7.

(d) Fugitive Emissions
Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

County Attainment Status

The source is located in Dekalb County.

Pollutant	Status
PM10	Attainment
SO_2	Attainment
NO_2	Attainment
Ozone	Attainment
CO	Attainment
Lead	Attainment

(a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. DeKalb County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) DeKalb County has been classified as attainment or unclassifiable for all criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(c) Fugitive Emissions
Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2, or 326 IAC 2-3 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

Source Status

Existing Source PSD, Part 70 or FESOP Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (tons/year)
PM	82.2
PM10	76.6
SO_2	0.09
VOC	1.74
CO	7.36
NO_x	8.78

(a) This existing source is not a major stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not in one of the 28 listed source categories because the source processes clean aluminum and brass along with aluminum and brass scrap generated within the source. It does not use secondary scrap brought from other sources.

(b) These emissions were based on potential to emit calculations (see Appendix A).

Proposed Modification

PTE from the proposed modification (based on 8,760 hours of operation per year at rated capacity including enforceable emission control and production limit, where applicable):

	Potential to Emit After Issuance (tons/year)						
Emission Units	PM	PM10	SO_2	VOC	CO	NO_X	HAPs
Space Heaters, Age Oven, Heat Treat	0.17	0.17	0.01	0.12	1.84	2.19	Negligible
5 Aluminum Crucible Furnaces	1.56	1.40	0.04	0.36	5.52	6.57	
3 Existing Brass Electric Induction Furnaces	21.9	21.9					
Aluminum Castings			0.016	0.11		0.008	
Aluminum Pouring/Cooling	3.45	3.45					

	Potential to Emit After Issuance (tons/year)						
Emission Units	PM	PM10	SO_2	VOC	CO	NO_X	HAPs
Aluminum Fluxing	0.44	0.23					
Aluminum Sand Handling	4.93	4.93					
Aluminum Manual Shakeout	0.26	0.18					
Brass Castings	0.02	0.02					
Brass Pouring/Cooling	4.60	4.60		0.15			
Brass Sand Handling	6.57	6.57					
Brass Shakeout	3.50	2.45					
1 Tumble Cleaning Unit	2.23	0.22					
Grinders	0.02	0.02					
Sand Screening	30.2	30.2					
Total Emissions From Existing Units	**79.9**	**76.4**	**0.09**	**0.75**	**7.36**	**8.78**	**NA**
Proposed Modification							
* 1 New Brass Electric Induction Furnace	--	--					
2 Tumble Cleaning Units	2.23	0.22					
Degreaser				0.99			
Total Emissions From Existing Units with Modification	**82.2**	**76.6**	**0.09**	**1.74**	**7.36**	**8.78**	
PSD Thresholds	<250	<250	<250	<250	<250	<250	NA

* The source plans to use the new brass electric furnace when the three (3) existing brass electric induction furnaces are experiencing downtime i.e. during the changing of alloys. However, the melting capacity of the furnaces is limited based on the maximum amount of metal molded by the aluminum molder squeezer and six brass molder squeezers. Adding the new furnace does not increase the capacity of product that can be made because the process is still bottlenecked by the molders. The PTE of PM/PM10 from all four (4) brass electric induction furnaces is equal to 21.9 tons per year.

This modification to an existing minor stationary source is not major because the emission increase is less than the PSD significant levels. Therefore, this source is not subject to the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)).

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

(a) each criteria pollutant is less than 100 tons per year,

(b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and

(c) any combination of HAPs is less than 25 tons/year.

This status is based on the potential to emit calculations (see Appendix A).

Federal Rule Applicability

(a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.

(b) The degreasing operations are not subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) 40 CFR 63, Subpart T (National Emission Standards for Halogenated Solvent Cleaning (326 IAC 14), because only non-halogenated solvents are used at this source.

(c) This source is not subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR 63.1500, Subpart RRR (National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production) because it is not a major source of HAPs as defined in 40 CFR 63, Subpart A. Also, the source does not produce secondary aluminum.

There are no other National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this source.

State Rule Applicability - Entire Source

326 IAC 2-6 (Emission Reporting)

This source is located in DeKalb County and the potential to emit of CO, VOC, NOx, PM10, and SO_2 is less than one hundred (100) tons per year. Therefore, 326 IAC 2-6 does not apply.

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

Ball Brass and Aluminum Foundry was constructed prior to August 7, 1977. This source consists of an aluminum and brass foundry processing clean aluminum and brass charge; and aluminum and brass scrap generated within the source. It does not use secondary scrap brought from other sources. Therefore, it is not in one (1) of the twenty-eight (28) categories. At the time the source was constructed, it was a minor source under PSD because the potential to emit of each criteria pollutant before controls was less than the PSD major source threshold of 250 tons per year. After each modification since its construction, the potential to emit of each criteria pollutant was calculated to be below 250 tons per year PSD threshold. In August 2003, the source submitted an application requesting the addition of one (1) new brass furnace and two (2) tumble cleaning units. After these modifications, the source's potential to emit of all criteria pollutants remain below 250

tons per year. Therefore, it is an existing minor source under PSD and not subject to 326 IAC 2-2 (PSD).

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAPs))

The operation of the brass and aluminum foundry plant will emit less than 10 tons per year of a single HAP and less than 25 tons per year of any combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

State Rule Applicability - Melting Furnaces and Foundry Facilities

326 IAC 6-3-2(Particulate Emission Limitations for Manufacturing Processes)

(a) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), particulate emissions from the brass and aluminum foundry shall not exceed the particulate emission limits in pounds per hour as shown in the table below:

Emission Units	Process Weight (lbs/hour)	Process Weight (tons/hour)	Particulate Emission Limit (lbs/hour)
Each of the 3 Brass Furnaces	167	0.083	0.78
1 Brass Furnace	500	0.25	1.62
Brass Castings	500	0.25	1.62
Brass Pouring/Castings	500	0.25	1.62
Brass Sand Handling	500	0.25	1.62
Brass Shakeout	500	0.25	1.62
Aluminum Castings	375	0.188	1.34
Aluminum Pouring/Cooling	375	0.188	1.34
Aluminum Sand Handling	375	0.188	1.34
Aluminum Manual Shakeout	375	0.188	1.34

The pounds per hour limitations were calculated with the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by the use of the equation:

$E = 4.10\ P^{0.67}$ where:

E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

One (1) wheelabrator dust collector (identified as DC-3) shall be in operation at all times when the four (4) brass electric induction furnaces are in operation to comply with these limits.

Based on the potential to emit calculations, the particulate emissions from the brass foundry (consisting of castings, pouring/castings, sand handling, and shakeout), aluminum foundry (consisting of castings, pouring/castings, sand handling, and shakeout) are less than the particulate emission limit calculated above (see Appendix A, page 13 of 13). Therefore, the source will be in compliance with this rule.

(b) Pursuant to 326 IAC 6-3-2(e)(2), the particulate emissions from any process not exempt under 326 IAC 6-3-1(b) or (c) and which has a maximum process weight rate less than 100 pounds per hour and the methods in 326 IAC 6-3-2(b) through (d) do no apply shall not exceed 0.551 pounds per hour. Therefore, the five (5) aluminum furnaces shall each not exceed 0.551 pounds per hour.

Based on the calculations provided in Appendix A, these emission units will be in compliance with this rule.

State Rule Applicability - Abrasive Grinders, Tumble Cleaning Units, Metal Reclaimer, Cutoff Saws

326 IAC 6-3-2(Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), particulate emissions from the six (6) abrasive grinders, three (3) tumble cleaning units, one (1) metal reclaimer, and two (2) brass cutoff saws shall not exceed the particulate emission limits in pounds per hour as shown in the table below:

Emission Units	Process Weight (lbs/hour)	Process Weight (tons/hour)	Particulate Emission Limit (lbs/hour)
Each of the 2 Aluminum Abrasive Grinders	187.5	0.094	0.84
Each of the 4 Brass Abrasive Grinders	125	0.063	0.64
1 Tumble Cleaning Unit	600	0.30	1.83
Each of the 2 Brass Cut-off Saws	187.5	0.094	0.84
1 Metal Reclaimer	1000	0.50	2.58
Each of the 2 Tumble Cleaning Units	300	0.15	1.15

The pounds per hour limitations were calculated with the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by the use of the equation:

$E = 4.10 P^{0.67}$ where:

E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

One (1) baghouse shall be in operation at all times when the one (1) metal reclaimer is in operation to comply with this limit.

Based on the potential to emit calculations, the particulate emissions from the six (6) abrasive grinders, three (3) tumble cleaning units, and two (2) brass cut off saws are less than the particulate emission limit calculated above (see Appendix A, page 13 of 13). Therefore, the source will be in compliance with this rule.

State Rule Applicability - Degreaser

326 IAC 8-6 (Organic Solvent Emission Limitations)

The degreaser unit is not subject to the requirements of 326 IAC 8-6 because this source is located in DeKalb County and has a potential to emit of VOC less than one hundred (100) tons per year.

326 IAC 8-3-5 (Cold Cleaner Degreaser Operation and Control)

The degreasing unit is subject to the requirements of 326 IAC 8-3-5 (Cold Cleaner Degreaser Operation) because this unit will be constructed in 2003, which is after the July 1, 1990 applicability date for this rule.

(a) Pursuant to 326 IAC 8-3-5(a) (Cold Cleaner Degreaser Operation and Control), for cold cleaner degreaser operations without remote solvent reservoirs constructed after July 1, 1990, the Permittee shall ensure that the following control equipment requirements are met:

(1) Equip the degreaser with a cover. The cover must be designed so that it can be easily operated with one (1) hand if:

(A) The solvent volatility is greater than two (2) kiloPascals (fifteen (15) millimeters of mercury or three-tenths (0.3) pounds per square inch) measured at thirty-eight degrees Celsius ($38^{O}C$) (one hundred degrees Fahrenheit ($100^{O}F$));

(B) The solvent is agitated; or

(C) The solvent is heated.

(2) Equip the degreaser with a facility for draining cleaned articles. If the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius ($38^{O}C$) (one hundred degrees Fahrenheit ($100^{O}F$)), then the drainage facility must be internal such that articles are enclosed under the cover while draining. The drainage facility may be external for applications where an internal type cannot fit into the cleaning system.

(3) Provide a permanent, conspicuous label which lists the operating requirements outlined in subsection (b).

(4) The solvent spray, if used, must be a solid, fluid stream and shall be applied at a pressure which does not cause excessive splashing.

(5) Equip the degreaser with one (1) of the following control devices if the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius ($38^{O}C$) (one hundred degrees Fahrenheit ($100^{O}F$)), or if the solvent is heated to a temperature greater than forty-eight and nine-tenths degrees Celsius ($48.9^{O}C$) (one hundred twenty degrees Fahrenheit ($120^{O}F$)):

(A) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.

(B) A water cover when solvent is used is insoluble in, and heavier than, water.

(C) Other systems of demonstrated equivalent control such as a refrigerated chiller of carbon adsorption. Such systems shall be submitted to the U.S. EPA as a SIP revision.

(b) Pursuant to 326 IAC 8-3-5(b) (Cold Cleaner Degreaser Operation and Control), the Permittee of a cold cleaning facility construction of which commenced after July 1, 1990, shall ensure that the following operating requirements are met:

(1) Close the cover whenever articles are not being handled in the degreaser.

(2) Drain cleaned articles for at least fifteen (15) seconds or until dripping ceases.

(3) Store waste solvent only in covered containers and prohibit the disposal or transfer of waste solvent in any manner in which greater than twenty percent (20%) of the waste solvent by weight could evaporate.

State Rule Applicability - Space Heaters, Core Bake Oven, Heat Treat Bath

There are no specifically applicable regulations that apply to these emission units.

Conclusion

The construction and operation of this brass and aluminum foundry shall be subject to the conditions of the attached New Source Construction and Minor Source Operating Permit 033-17792-00037.

Appendix A: Emission Calculations
Natural Gas Combustion Only
MMBTU/HR<100
Space Heaters, Age Oven, and Heat Treat

Company Name: Ball Brass and Aluminum Foundry
Address: 520 Hazel Street, Auburn, Indiana 46706
MSOP: 033-17792
Plt ID: 033-00037
Reviewer: ERG/SD
Date: August 27, 2003

Heat Input Capacity MMBtu/hour		Potential Throughput MMCF/year
5.00	(14 units total)	**43.8**

Pollutant

	* PM	* PM10	SO_2	** NO_x	VOC	CO
Emission Factor (lb/MMCF)	7.6	7.6	0.6	100	5.5	84.0
Potential To Emit (tons/year)	0.17	0.17	0.01	2.19	0.12	1.84

*PM and PM10 emission factors are filterable and condensible PM and PM10 combined.
**Emission factors for NO_x: Uncontrolled = 100 lb/MMCF
Emission factors from AP-42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (July, 1998).

All Emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas

METHODOLOGY

Potential throughput (MMCF/year) = Heat input capacity (MMBtu/hr) * 8760 hours/year * 1 MMCF/1000 MMBtu
PTE (tons/year) = Potential throughput (MMCF/year) * Emission factor (lb/MMCF) * 1 ton/2000 lbs

See next page for HAPs emissions calculations.

Appendix A: Emission Calculations
Natural Gas Combustion Only
MMBTU/HR<100
Space Heaters, Age Oven, and Heat Treat

Company Name: Ball Brass and Aluminum Foundry
Address: 520 Hazel Street, Auburn, Indiana 46706
MSOP: 033-17792
Plt ID: 033-00037
Reviewer: ERG/SD
Date: August 27, 2003

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor (lb/MMCF)	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential To Emit (tons/year)	4.60E-05	2.63E-05	1.64E-03	3.94E-02	7.45E-05

HAPs - Metals

	Lead	Cadmuim	Chromium	Manganese	Nickel
Emission Factor (lb/MMCF)	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential To Emit (tons/year)	1.095E-05	2.409E-05	3.066E-05	8.322E-06	4.599E-05

Methodology is the same as previous page.

The five highest organic and metal HAPs emission factors provided above are from AP-42, Chapter 1.4, Table 1-4.2, 1.4-3 and 1.4-4 (July, 1998). Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Emission Calculations
Natural Gas Combustion Only
Five (5) Aluminum Crucible Furnaces

Address: 520 Hazel Street, Auburn, Indiana 46706
MSOP: 033-17792
Plt ID: 033-00037
Reviewer: ERG/SD
Date: August 27, 2003

Heat Input Capacity MMBtu/hour		Potential Throughput MMCF/year
15.0	(5 Units Total)	**131.4**

Pollutant

	* PM	* PM10	SO_2	** NO_x	VOC	CO
Emission Factor (lb/MMCF)	7.6	7.6	0.6	100	5.5	84.0
Potential To Emit (tons/year)	NA	NA	0.04	6.57	0.36	5.52

*PM and PM10 emissions are included in the emission calculation for melting process.
**Emission factors for NO_x: Uncontrolled = 100 lb/MMCF
Emission factors from AP-42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (July, 1998).

All Emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas

METHODOLOGY

Potential throughput (MMCF/year) = Heat input capacity (MMBtu/hour) * 8760 hours/year * 1 MMCF/1000 MMBtu
PTE (tons/year) = Potential throughput (MMCF/year) * Emission factor (lb/MMCF) * 1 ton/2000 lbs

See next page for HAPs emissions calculations.

Appendix A: Emission Calculations
Natural Gas Combustion Only
Five (5) Aluminum Crucible Furnaces

Company Name: Ball Brass and Aluminum Foundry
Address: 520 Hazel Street, Auburn, Indiana 46706
MSOP: 033-17792
Plt ID: 033-00037
Reviewer: ERG/SD
Date: August 27, 2003

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor (lb/MMCF)	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential To Emit (tons/year)	1.38E-04	7.88E-05	4.93E-03	1.18E-01	2.23E-04

HAPs - Metals

	Lead	Cadmuim	Chromium	Manganese	Nickel
Emission Factor (lb/MMCF)	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential To Emit (tons/year)	3.29E-05	7.23E-05	9.20E-05	2.50E-05	1.38E-04

Methodology is the same as previous page.

The five highest organic and metal HAPs emission factors provided above are from AP-42, Chapter 1.4, Table 1-4.2, 1.4-3 and 1.4-4 (July, 1998).
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Emission Calculations
Five (5) Aluminum Furnaces and Four (4) Electric Induction Furnaces

Company Name: Ball Brass and Aluminum Foundry
Address: 520 Hazel Street, Auburn, Indiana 46706
MSOP: 033-17792
Plt ID: 033-00037
Reviewer: ERG/SD
Date: August 27, 2003

Emission Unit	Maximum Throughput Rate (lbs/hour)	Maximum Throughput Rate (tons/hour)	* Emission Factor (lbs/ton) PM	PM10	PTE of PM before control (tons/year)	PTE of PM10 before control (tons/year)
5 Aluminum Crucible Furnaces	375	0.188	1.9	1.7	1.56	1.40
3 existing and 1 new Brass Electric Induction Furnaces **	500	0.25	20	20	21.9	21.9
				TOTAL (tons/year) =	**23.5**	**23.3**

* PM/PM10 emission factor for Aluminum Crubible Furnaces from FIRE Vol II, Secondary Metal Production: Smelting Furnace/Crucible (SCC 3-04-001-02).
* PM/PM10 emission factor for Brass Electric Induction Furnaces are from FIRE Vol II, Secondary Metal Production: Bronze Electric Induction (SCC 3-04-002-24).

Control = Four (4) Brass Electric Induction Furnaces are controlled by wheelabrator dust collector (identified as DC-3) with 99 % control efficiency.
****** The source intends to operate the one (1) new brass electric induction furnace only when the three (3) existing brass electric induction furnaces are expierencing downtime during changes in alloys. The brass furnaces in combination cannot operate more than 500 lbs/hour due to the limitation on the molder sqeezer capacities.

METHODOLOGY
Maximum throughput (tons/hour) = Maximum throughput (lbs/hour) * 1ton/2000 lbs
PTE before control (tons/year) = Maximum throughput (tons/hour) * Emission factor (lb/ton) * 1ton/2000 lbs * 8760 hours/year
PTE after control (tons/year) = Maximum throughput (tons/hour) * Emission factor (lb/ton) * 1ton/2000 lbs * 8760 hours/year* (1- Control efficiency %)

Appendix A: Emission Calculations
Aluminum Foundry Facilities

Company Name: Ball Brass and Aluminum Foundry
Address: 520 Hazel Street, Auburn, Indiana 46706
MSOP: 033-17792
Plt ID: 033-00037
Reviewer: ERG/SD
Date: August 27, 2003

POTENTIAL TO EMIT BEFORE CONTROLS IN TONS PER YEAR

Emission Units	Maximum Throughput		* PM Emission Factor	PTE of PM	* PM10 Emission Factor	PTE of PM10	*VOC Emission Factor	PTE of VOC	*SO_2 Emission Factor	PTE of SO_2	*N0x Emission Factor	PTE of NOx
	(lbs/hour)	(tons/hour)	(lbs/ton)	(tons/year)	(lb/ton)	(tons/year)	(lb/ton)	(tons/year)	(lb/ton)	(tons/year)	(lb/ton)	(tons/year)
Aluminum Castings	375	0.188		negligible		negligible	0.14	0.11	0.02	0.016	0.01	0.008
Aluminum Pouring/Cooling	375	0.188	4.20	3.45	4.20	3.45						
Alumium Fluxing	0.20	0.0001	1000	0.44	532	0.23						
Aluminum Sand Handling	375	0.188	6.0	4.93	6.0	4.93						
Aluminum Manual Shakeout	375	0.188	0.32	0.26	0.22	0.18						
TOTAL				**9.08**		**8.79**		**0.11**		**0.016**		**0.008**

*** Note:**
There are no PM/PM10 emission factor for aluminum castings. Emission factor for SO_2, VOC and NOx are from FIRE Vol II, Secondary Metal Production- Aluminum Castings (SCC 3-04-001-14).
Emission factor for aluminum pouring/cooling is from FIRE Vol II, Secondary Metal Production - Grey Iron Foundries (SCC 3-04-003-18).
Emission Factor for aluminum fluxing is from FIRE Vol II, Secondary Metal Production - Aluminum: Fluxing/Chlorination (SCC 3-04-001-04)
Emission Factor for aluminum sand handling is from FIRE Vol II, Secondary Metal Production - Grey Iron Foundries: Sand Grinding/Handling (SCC 3-04-003-52).
The AP-42 emission factor for shakeout is based on a shaker machine. Because castings are manually knocked out of molds.
emissions at this facility are assumed to be approximately 90% less based on engineering estimates.

METHODOLOGY

Maximum throughput (tons/hour) = Maximum throughput (lbs/hour) * 1 ton/2000 lbs
PTE before control (tons/year) = Maximum throughput (tons/hour) * Emission factor (lb/ton) * 1ton/2000 lbs * 8760 hours/year

Appendix A: Emission Calculations
Brass Foundry Facilities

Company Name: Ball Brass and Aluminum Foundry
Address: 520 Hazel Street, Auburn, Indiana 46706
MSOP: 033-17792
Plt ID: 033-00037
Reviewer: ERG/SD
Date: August 27, 2003

POTENTIAL TO EMIT BEFORE CONTROLS IN TONS PER YEAR

Emission Units	Maximum Throughput		*PM Emission Factor	PM	*PM10 Emission Factor	PM10	*VOC Emission Factor	VOC	*SO_2 Emission Factor	SO_2	*N0x Emission Factor	N0x
	(lbs/hour)	(tons/hour)	(lbs/ton)	(tons/year)	(lb/ton)	(tons/year)	(lb/ton)	(tons/year)	(lb/ton)	(tons/year)	(lb/ton)	(tons/year)
Brass Castings	500	0.25	0.015	0.02	0.015	0.02						
Brass Pouring/Cooling	500	0.25	4.20	4.60	4.20	4.60	0.14	0.15	0.02	0.02	0.01	0.01
Brass Sand Handling	500	0.25	6.0	6.57	6.0	6.57						
Brass Shakeout	500	0.25	3.20	3.50	2.24	2.45	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL				**14.7**		**13.6**		**0.15**		**0.02**		**0.01**

*** Note:**
Emission factor for brass castings is from FIRE Vol II, Secondary Metal Production - Copper: Casting Operations (SCC 3-04-002-39).
Emission factor for pouring/casting\ is from FIRE Vol II, Secondary Metal Production - Grey Iron Foundries: Pouring/Castings (SCC 3-04-003-20).
Emission factor for sand handling is from FIRE Vol II, Secondary Metal Production - Grey Iron Foundries: Sand Grinding/Handling (SCC 3-04-003-52).
Emission factor for brass shakeout is from FIRE Vol II, Secondary Metal Production - Grey Iron Foundries: Casting Shakeout (SCC 3-04-003-31).

Control = Brass shakeout is controlled by one (1) wheelabrator dust collector (identified as DC-2)

METHODOLOGY

Maximum throughput (tons/hour) = Maximum throughput (lbs/hour) * 1ton/2000 lbs
PTE before control (tons/year) = Maximum throughput (tons/hour) * Emission factor (lb/ton) * 1ton/2000 lbs * 8760 hours/year

Appendix A: Emissions Calculations
PM/PM10 Emissions
From Three (3) Tumble Cleaning Units

Company Name: Ball Brass and Aluminum Foundry
Address: 520 Hazel Street, Auburn, Indiana 46706
MSOP: 033-17792
Plt ID: 033-00037
Reviewer: ERG/SD
Date: August 27, 2003

Emission Units	Max Throughput Rate (lbs/hour)	Max Throughput Rate (tons/hour)	* Emission Factor PM (lbs/ton)	* Emission Factor PM10 (lbs/ton)	Potential To Emit Before Control PM (tons/year)	Potential To Emit Before Control PM10 (tons/year)	Control Efficiency %	Potential To Emit After Control PM (tons/year)	Potential To Emit After Control PM10 (tons/year)
1 Tumble Cleaning Unit	600	0.30	1.7	0.17	2.23	0.22	98%	0.04	0.004
2 Tumble Cleaning Units	600	0.30	1.7	0.17	2.23	0.22	98%	0.04	0.004
TOTAL					**4.47**	**0.45**		**0.09**	**0.01**

*PM/PM10 emission factor is from FIRE Vol II, Secondary Metal Production - Grey Iron Foundries: Shot Blasting (SCC 3-04-003-40).
The emission factor for tumble cleaning is assumed to be 90 % less because the source does not process ferrous castings. Therefore, emissions at this facility are relatively low based on engineering estimates.

Control = One (1) wheelabrator dust collector (identified as DC-1)

METHODOLOGY
PTE PM/PM10 before control (tons/year) = Max.Throughput Rate (tons/hour) * Emission Factor (lbs/ton) * 8760 hours/year * 1 ton/2000 lbs
PTE PM/PM10 after control (tons/year) = Max.Throughput Rate (tons/hour) * Emission Factor (lbs/ton) * 8760 hours/year * 1 ton/2000 lbs * (1-Control Efficiency %)

Appendix A: Emissions Calculations
PM/PM10 Emissions
From Three (3) Tumble Cleaning Units

Company Name: Ball Brass and Aluminum Foundry
Address: 520 Hazel Street, Auburn, Indiana 46706
MSOP: 033-17792
Plt ID: 033-00037
Reviewer: ERG/SD
Date: August 27, 2003

Emission Units	Max Throughput Rate (lbs/hour)	Max Throughput Rate (tons/hour)	* Emission Factor PM (lbs/ton)	* Emission Factor PM10 (lbs/ton)	Potential To Emit Before Control PM (tons/year)	Potential To Emit Before Control PM10 (tons/year)	Control Efficiency %	Potential To Emit After Control PM (tons/year)	Potential To Emit After Control PM10 (tons/year)
1 Tumble Cleaning Unit	600	0.30	1.7	0.17	2.23	0.22	98%	0.04	0.004
2 Tumble Cleaning Units	600	0.30	1.7	0.17	2.23	0.22	98%	0.04	0.004
TOTAL					**4.47**	**0.45**		**0.09**	**0.01**

*PM/PM10 emission factor is from FIRE Vol II, Secondary Metal Production - Grey Iron Foundries: Shot Blasting (SCC 3-04-003-40).
The emission factor for tumble cleaning is assumed to be 90 % less because the source does not process ferrous castings. Therefore, emissions at this facility are relatively low based on engineering estimates.

Control = One (1) wheelabrator dust collector (identified as DC-1)

METHODOLOGY
PTE PM/PM10 before control (tons/year) = Max.Throughput Rate (tons/hour) * Emission Factor (lbs/ton) * 8760 hours/year * 1 ton/2000 lbs
PTE PM/PM10 after control (tons/year) = Max.Throughput Rate (tons/hour) * Emission Factor (lbs/ton) * 8760 hours/year * 1 ton/2000 lbs * (1-Control Efficiency %)

Appendix A: Emission Calculations
PM/PM10 Emissions
From One (1) Metal Reclaimer

Company Name: Ball Brass and Aluminum Foundry
Address: 520 Hazel Street, Auburn, Indiana 46706
MSOP: 033-17792
Plt ID: 033-00037
Reviewer: ERG/SD
Date: August 27, 2003

		PTE After Control	PTE Before Control
*PM Control Equipment = Baghouse		ton/year	ton/year
Outlet Grain Loading in grains/acf	0.014	1.51	30.3
Air Flow Rate in acf/min	2880		
Control Efficiency in %	95%		

* Assume all PM emissions are equal to PM10 emissions.

METHODOLOGY

PTE PM/PM10 after control (ton/year) = Outlet grain loading (gr/acf) * Air flow rate (acf/min) * 60 min/hour * 1 lb/7000grains * 8760 hours/year * 1ton /2000 lbs
PTE PM/PM10 before control (ton/year) = Outlet grain loading (gr/acf) * Air flow rate (acf/min) * 60 min/hour * 1 lb/7000grains * 8760 hours/year * 1ton /2000 lbs *1/(1-C

Appendix A: Emission Calculations
VOC Emissions
From Degreasing: Cold Cleaners

Company Name: Ball Brass and Aluminum Foundry
Address: 520 Hazel Street, Auburn, Indiana 46706
MSOP: 033-17792
Plt ID: 033-00037
Reviewer: ERG/SD
Date: August 27, 2003

Material	Density (lbs/gal)	Max. Usage Rate (gal/hour)	Weight VOC (%)	Potential To Emit of VOC (tons/year)
Safety Kleen	7.22	0.031	100%	0.99
TOTAL				**0.99**

METHODOLOGY

PTE of VOC (tons/year) = Density (lbs/gal) * Max. usage rate (gal/hour) * Weight % VOC * 1ton/2000 lbs * 8760 hours/year

Appendix A: Emission Calculations
Summary

Company Name: Ball Brass and Aluminum Foundry
Address: 520 Hazel Street, Auburn, Indiana 46706
MSOP: 033-17792
Plt ID: 033-00037
Reviewer: ERG/SD
Date: August 27, 2003

POTENTIAL TO EMIT BEFORE CONTROLS

Emission Units	PM	PM10	SO2	NOx	VOC	CO
Space Heaters, Age Oven, Heat Treat	0.17	0.17	0.01	2.19	0.12	1.84
5 Aluminum Crucible Furnaces	1.56	1.40	0.04	6.57	0.36	5.52
3 existing and 1 new Brass Electric Induction Furnaces	21.9	21.9				
Aluminum Foundry Facilities consisting of						
Aluminum Castings			0.016	0.008	0.11	
Aluminum Pouring/Cooling	3.45	3.45				
Alumium Fluxing	0.44	0.23				
Aluminum Sand Handling	4.93	4.93				
Aluminum Manual Shakeout	0.26	0.18				
Brass Foundry Facilities consisting of						
Brass Castings	0.02	0.02				
Brass Pouring/Casting	4.60	4.60	0.02	0.01	0.15	
Brass Sand Handling	6.57	6.57				
Brass Shakeout	3.50	2.45				
1 Tumble Cleaning Unit	2.23	0.22				
2 Tumble Cleaning Units	2.23	0.22				
Grinders	0.02	0.01				
Sand Screening	30.3	30.3				
Degreaser					0.99	
TOTAL	**82.2**	**76.6**	**0.09**	**8.78**	**1.74**	**7.36**

Appendix A: Emission Calculations
Process Weight Rule

Company Name: Ball Brass and Aluminum Foundry
Address: 520 Hazel Street, Auburn, Indiana 46706
MSOP: 033-17792
Plt ID: 033-00037
Reviewer: ERG/SD
Date: August 27, 2003

PROCESS WEIGHT RULE 326 IAC 6-3-2

Emission Units		Max. Throughput Capacity (P) (lb/hour)	(ton/hour)	Emission Rate (E) (lb/hour)	Source's Estimated PTE (lb/hour)
Each of	5 Al Melting Furnaces	75	0.038	0.45	0.07
Each of	3 Brass Melting Furnaces	167	0.083	0.78	1.67
	1 new Brass Melthing Furnace	500	0.25	1.62	#REF!
	Brass Castings	500	0.25	1.62	0.004
	Brass Pouring/Casting	500	0.25	1.62	1.05
	Brass Sand Handling	500	0.25	1.62	1.50
	Brass Shakeout	500	0.25	1.62	0.80
	Aluminum Castings	375	0.188	1.34	negligible
	Aluminum Pouring/Cooling	375	0.188	1.34	0.79
	Aluminum Sand Handling	375	0.188	1.34	1.13
	Aluminum Manual Shakeout	375	0.188	1.34	0.06
	1 Tumble Cleaning unit	600	0.30	1.83	0.17
Each of	2 Tumble Cleaning units	300	0.15	1.15	0.17
Each of	2 Al Abrasive Grinders	187.5	0.094	0.84	0.0009
Each of	4 Brass Abrasive Grinders	125	0.063	0.64	0.0006
Each of	2 Cut off Saws	187.5	0.094	0.84	negligible
	1 Metal Reclaimer	1000	0.50	2.58	6.91

METHODOLOGY

E = 4.10* P^0.67

where: E = Emission Rate in lbs per hour
P = Maximum Throughput Capacity in tons per hour